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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 31270.4-2025

Replacing GB/T 31270.4-2014

Test guidelines on environmental safety assessment for chemical pesticides - Part 4: Adsorption/desorption in soils

化学农药环境安全评价试验准则 第4部分：土壤吸附/解吸试验

Issued on: October 31, 2025 **Implemented on: May 1, 2026**

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Standardization Administration of the PRC

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document is Part 4 of GB/T 31270, "Test Guidelines for Environmental Safety Evaluation of Chemical Pesticides". GB/T 31270 has been published. The following section.

1.Soil Metabolism Test;

2.Hydrolysis Test;

3.Photolysis Experiment;

4.Soil Adsorption/Desorption Tests;

5.Soil Leaching Test;

6.Volatility Testing;

7.Bioaccumulation Assays;

8.Metabolic Experiments of Water-Sediment Systems;

9.Short-term feeding toxicity tests in birds;

10.Acute toxicity tests on bees;

11.Acute Toxicity Tests on Silkworms;

12.Acute Toxicity Testing in Fish;

1 Scope

GB/T 31270.4-2025 is the Chinese national standard covering how tightly a pesticide binds to soil - the batch equilibrium test across several soil types, the adsorption coefficient normalised to organic carbon, and the desorption that determines whether the compound will move to groundwater. Part 4 of the series. It replaces GB/T 31270.4-2014, under the Ministry of Agriculture and Rural Affairs. In force from 1 May 2026. Issued on 31 October 2025, it has been in force since 1 May 2026, replacing GB/T 31270.4-2014.

This document describes the experimental conditions, reagents and materials, instruments and equipment, and test samples for soil adsorption/desorption tests using the batch equilibrium method. The test content includes control materials, test procedures, test data processing, quality control, and test reports. This document applies to soil adsorption/desorption tests conducted for the registration of chemical pesticides. This document does not apply to pesticides that are highly degradable or volatile.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 6682 Specifications and test methods for water used in analytical laboratories

GB/T 32726 Soil Quality - Field Soil Description LY/T 1215 Determination of soil moisture and physical properties in forests LY/T 1225 Determination of particle size distribution (mechanical composition) of forest soils LY/T 1243 Determination of Cation Exchange Capacity in Forest Soils NY/T

52 Soil Moisture Determination Method

NY/T 1121.2 Soil Testing - Part

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Adsorption percentage Under the experimental conditions, the percentage of the mass of the test substance adsorbed on the soil relative to the actual mass of the test substance at the beginning of the experiment.

3.2 Kd The ratio of the concentrations of the test substance in the solid and liquid phases when the distribution between the two phases reaches equilibrium.

4 Soil Adsorption/Desorption Tests Warning

---Personnel using this document should have practical experience working in a formal laboratory. This document does not address all possible safety issues. Users are responsible for taking appropriate safety and health measures and ensuring compliance with relevant national regulations.